



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|--|-------------|----------------------|---------------------|------------------|
| 10/087,092 | 03/01/2002 | Anthony C. Bonora | 34741-774 | 1981 |
| 33864 | 7590 | 10/06/2003 | EXAMINER | |
| O'MELVENY & MYERS, LLP 275 BATTERY STREET SUITE 2600 SAN FRANCISCO, CA 94111-3305 | | | | FOX, CHARLES A |
| ART UNIT | | PAPER NUMBER | | |
| | | 3652 | | |

DATE MAILED: 10/06/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | |
|------------------------------|----------------------------|---------------------|
| Office Action Summary | Application No. | Applicant(s) |
| | 10/087,092 | BONORA ET AL. |
| | Examiner Charles A. Fox | Art Unit 3652 |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on _____.
- 2a) This action is FINAL. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-15 is/are pending in the application.
 - 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 1-15 is/are rejected.
- 7) Claim(s) _____ is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on 30 July 2002 is/are: a) accepted or b) objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) The proposed drawing correction filed on _____ is: a) approved b) disapproved by the Examiner.
 If approved, corrected drawings are required in reply to this Office action.
- 12) The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
 - a) The translation of the foreign language provisional application has been received.
- 15) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

| | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) <u>3,10&11</u> . | 6) <input type="checkbox"/> Other: _____ |

Information Disclosure Statement

Applicant's petition to expunge application number 10/194,702 from the record will not be granted for the following reasons:

sections B-D of MPEP 724.05 have not been met;

application 10/194,702 has been published as US 2003/0091409, and is public knowledge.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 8 and 11 are rejected under 35 U.S.C. 102(b) as being anticipated by Bacchi et al.

Bacchi et al. US 6,281,516 discloses a system for transferring wafers comprising :

a unified frame (12) having an interior and an exterior mounting surface;
said exterior surface exposed to the ambient atmosphere;
said interior surface being isolated from said ambient atmosphere;
a carrier advance assembly (16) mounted to said exterior mounting surface;
a carrier docking isolation plate (96) mounted to said exterior mounting surface;
a wafer handler (20) mounted to said interior mounting surface;
a port door assembly having a port door (76) and a port door drive mechanism(28) for moving said port door into and out of a storage position.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-36,7,13 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bonora et al. in view of Bacchi et al. In regards to claims 1 and 13 Bonora et al. US 6,138,721 teach a system for transferring wafers comprising:

a unified frame, including at least 2 vertical struts spaced apart and mounted to an upper and a lower support member, said frame defining at least one input/output port and a port door storage area; see figure 2.

a carrier docking isolation plate (10) mounted to each vertical strut;
a carrier advance assembly (13) for supporting a wafer carrier, and moving a wafer carrier towards and away from said carrier docking isolation plate;

a port door assembly (15) and a drive mechanism for engaging and mating with a wafer carrier door and moving said door into and out of a storage area.

Bonora et al. do not teach a wafer handling robot connected to the frame assembly. Bacchi et al. teach a wafer handling system comprising :

a frame (12) for supporting a plate (18);
a port door (17) in said plate;
a wafer carrier stage connected to a first side of said plate;

a wafer handling robot (20) connected to said frame (12) for moving wafers into and out of said wafer carrier. It would have been obvious to one of ordinary skill in the art, at the time of invention to provide a wafer handling robot as taught by Bacchi et al. in the device taught by Bonora et al. in order to allow the device to move wafer without having to depend on the host process device to have a wafer handler, thereby allowing the device to work with a wide range of existing process machines.

In regards to claims 2 and 3 Bonora et al. further teach the two vertical struts are substantially parallel with each other and the carrier docking isolation plate is removably mounted to said frame.

In regards to claims 6,7 and 14 Bacchi et al. further teach the wafer handling robot as comprising:

- a linear drive (404) providing motion in the X-axis;
- a rotational drive mounted to said linear drive for rotation about a theta-axis;
- a z-axis linear drive for raising and lowering the wafer end effector;
- a radial drive for imparting radial motion to said end effector;
- wherein said radial axis rotates about said theta-axis.

It would have been obvious to one of ordinary skill in the art, at the time of invention to provide the type of handler taught by Bacchi et al. to the device of Bonora et al. as wafer handlers that perform in such a manner allow the device to work with a wide variety of arrangements of process equipment.

Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bonora et al. and Bacchi et al. as applied to claim 1 above, and further in view of Babbs et al.

Bonora et al. and Bacchi et al. teach the limitations of claim 1 as above they do not teach the floor of the port door storage area as being perforated. Babbs et al. US 6,520,727 teaches a modular front end unit for wafer processing machines with a perforated floor for allowing the pressure generated from a fan (141) to exit said space. It would have been obvious to one of ordinary skill in the art, at the time of invention to provide a perforated floor as taught by Babbs et al. on the device taught by Bonora et al. and Bacchi et al. in order to allow the device to force any particles generated by the port door mechanism to be forced out of the apparatus by use of a fan.

Claims 4 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bonora et al. and Bacchi et al. as applied to claims 1 and 13 above, and further in view of Saeki et al. Bonora et al. and Bacchi et al. teach the limitations of claims 1 and 13 as above, they do not teach the docking isolation plate as being transparent. Saeki et al. US 6,053,983 teaches making a wafer carrier from transparent material as a means for determining the contents of the carrier and their condition. It would have been obvious to one of ordinary skill in the art, at the time of invention to use a transparent material as taught by Saeki et al. on the device taught by Bonora et al. and Bacchi et al. in order to allow an operator to look into a particular area without having to compromise the environmental isolation of that area.

Claim12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bacchi et al. in view of Saeki et al. Bacchi et al. teach a system for transferring wafers comprising :

a unified frame (12) having an interior and an exterior mounting surface;

said exterior surface exposed to the ambient atmosphere;
said interior surface being isolated from said ambient atmosphere;
a carrier advance assembly (16) mounted to said exterior mounting surface;
a carrier docking isolation plate (96) mounted to said exterior mounting surface;
a wafer handler (20) mounted to said interior mounting surface;
a port door assembly having a port door (76) and a port door drive mechanism(28) for moving said port door into and out of a storage position.
wherein the wafer handling robot comprises:

a linear drive (404) providing motion in the X-axis;
a rotational drive mounted to said linear drive for rotation about a theta-axis;
a z-axis linear drive for raising and lowering the wafer end effector;
a radial drive for imparting radial motion to said end effector;
wherein said radial axis rotates about said theta-axis.

Bacchi et al. do not teach the docking isolation plate as being transparent. Saeki et al. teaches making a wafer carrier from transparent material as a means for determining the contents of the carrier and their condition. It would have been obvious to one of ordinary skill in the art, at the time of invention to use a transparent material as taught by Saeki et al. on the device taught by and Bacchi et al. in order to allow an operator to look into a particular area without having to compromise the environmental isolation of that area.

Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bacchi et al. as applied to claim 8 above, and further in view of Bonora et al. Bacchi et al. teach the limitations of claim 8 as above, they do not teach the device as being above the floor surface. Bonora et al. teach a bolt on structure for wafer process machines that when attached to the machines is located above the floor surface. It would have been obvious to one of ordinary skill in the art, at the time of invention to provide ground clearance as taught by Bonora et al. on the device taught by Bacchi et al. in order to allow for adjustments in the alignment of the device that would not be possible if the device was resting on the floor.

Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bacchi et al. as applied to claim 8 above, and further in view of Babbs et al. Bacchi et al. teaches the limitations of claim 8 as above, they do not teach a control box on the outside surface of the device. Babbs et al. teach a front end system for transferring wafer from a cassette with a control box (110) connected to the exterior surface of the device. It would have been obvious to one of ordinary skill in the art, at the time of invention to provide a controller as taught by Babbs et al. to the device taught by Bacchi et al. in order to allow an operator to manually control the device as needed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Charles A. Fox whose telephone number is 703-605-4294. The examiner can normally be reached between 7:00-5:00 Monday-Thursday.

Art Unit: 3652

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Eileen D. Lillis can be reached at 703-308-3248. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-1113.



EILEEN D. LILLIS
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 3600

CAF

CAF

9-29-03